Listing of Claims:

1. (Currently Amended) A ~~semiconductor optical device characterized by~~ super luminescent diode having a broad optical spectral characteristic whose center wavelength is in a range from approximately 800 nm to approximately 850 nm, and which has a spectral half bandwidth greater than or equal to a predetermined value, comprising:

a semiconductor substrate; and

an active layer which is formed ~~above~~ on a side of the semiconductor substrate, the active layer having a plurality of quantum wells which is formed from a plurality of barrier layers and a plurality of well layers ~~sandwiched among the plurality of~~ formed between the barrier layers,

wherein [[,]] at least one ~~well layer~~ of the ~~plurality of~~ well layers has a layer thickness within a range from approximately 2.5 nm to approximately 5 nm, and is formed from an $In_{xa}Ga_{(1-xa)}As$ film, ~~and~~ a composition ratio xa of the In ~~takes any one value~~ being within a range from approximately 0.05 to approximately 0.20, whereby the at least one well layer is formed as a strained well layer ~~in which~~ having a lattice distortion ~~bought about in the well layer takes any one~~ which has a value within a range from approximately 0.35% to approximately 1.5%, and

~~due to~~ wherein the strained well layer ~~being~~ is formed so as to have a bandgap wavelength different from ~~those~~ bandgap wavelengths of the other well layers. ~~, the semiconductor optical device is configured capable of representing, as an optical spectral characteristic, a broad optical spectral characteristic whose center wavelength is from approximately 800 nm to approximately 850 nm, and which has a spectral half bandwidth greater than or equal to a predetermined value.~~

Claim 2 (Canceled).

3. (Currently Amended) The ~~semiconductor optical device~~ super luminescent diode according to claim 1, ~~characterized in that~~ wherein the plurality of quantum wells ~~included~~ formed in the active layer ~~respectively~~ have substantially identical layer ~~thickness~~ thicknesses.

Claim 4-6 (Canceled).

7. (Currently Amended) The ~~semiconductor optical device~~ super luminescent diode according to claim 1, ~~characterized in that~~ wherein an n-GaAs substrate is used as the semiconductor substrate.

8. (Currently Amended) The ~~semiconductor optical device~~ super luminescent diode according to claim [[4]] 1, ~~characterized in that the SLD comprises, as the semiconductor optical device~~ further comprising:

a first cladding layer formed ~~above~~ on a first surface of the semiconductor substrate, wherein [[;]] the active layer is formed ~~above~~ on the first cladding layer;

a second cladding layer formed ~~above~~ on the active layer;

an etching blocking layer formed in the second cladding layer to divide the second cladding layer;

a contact layer formed ~~above~~ on the second cladding layer;

an insulating film formed ~~above~~ on the contact layer and ~~above~~ on first and second regions of the etching blocking layer;

a first electrode formed ~~above~~ on the insulating film; and

a second electrode formed on ~~a rear face~~ a second surface of the semiconductor substrate, which is opposite to the first surface; ~~and has~~

wherein said super luminescent diode includes:

a ridge portion which serves as a gain region, the ridge portion being formed between the first and second regions of the etching blocking layer in a trapezoidal shape ~~above~~ so as to project from the etching blocking layer ~~at a central portion of the semiconductor optical device in a shorter direction,~~ and

so as to extend in a stripe form ~~above the etching blocking layer at a position~~ from ~~one~~ a first facet to a vicinity of a central portion of ~~the semiconductor optical device~~ said super luminescent diode in a longitudinal direction of ~~the semiconductor optical device~~ said super luminescent diode;

an absorption region which absorbs light and electric current, wherein the absorption region, ~~being~~ in which the active layer is formed, is formed in a stripe form in an inside of ~~the semiconductor optical device including the active layer at~~ said super luminescent diode so as to extend from a position adjacent to the ridge portion ~~from a~~ at the vicinity of the central portion to ~~another~~ a second facet of ~~the semiconductor optical device~~ said super luminescent diode in the longitudinal direction of ~~the semiconductor optical device~~ said super luminescent diode;

regions to which light is not guided, ~~the regions being~~ which are formed ~~at positions facing~~ so as to extend along both ~~side portions~~ sides of the ridge portion; and

an antireflection coating which is formed at ~~one~~ the first facet ~~in the longitudinal direction of the semiconductor optical device~~ of said super luminescent diode.

Claims 9-17 (Canceled).